

Serial No. 10/813,690
April 27, 2005
Reply to the Office Action dated January 27, 2005
Page 2 of 8

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (issued) A surface acoustic wave device comprising:
a LiTaO₃ substrate; and
an interdigital transducer provided on the LiTaO₃ substrate, said interdigital transducer containing as a major component at least one of Au, Ag, Ta, Mo, Cu, Ni, Cr, Zn, and W; wherein
said interdigital transducer has a normalized film thickness H/λ within a range of approximately 0.001 to approximately 0.05 so as to excite a shear horizontal wave.
2. (issued) A surface acoustic wave device according to claim 1, wherein said interdigital transducer includes Au as a major component, said substrate has Euler angles of approximately (0°, 125° - 146°, 0°± 5°).
3. (issued) A surface acoustic wave device according to claim 1, wherein said interdigital transducer includes Ag as a major component, said substrate has Euler angles of approximately (0°, 125° - 140°, 0°± 5°), and said normalized film thickness H/λ is within the range of approximately 0.002 to 0.05.
4. (issued) A surface acoustic wave device according to claim 1, wherein said interdigital transducer includes Ta as a major component, said substrate has Euler angles of approximately (0°, 125° - 140°, 0°± 5°), and said normalized film thickness H/λ is within the range of approximately 0.002 to 0.05.

Serial No. 10/813,690

April 27, 2005

Reply to the Office Action dated January 27, 2005

Page 3 of 8

5. (issued) A surface acoustic wave device according to claim 1, wherein said interdigital transducer includes Mo as a major component, said substrate has Euler angles of approximately (0° , $125^\circ - 134^\circ$, $0^\circ \pm 5^\circ$), and said normalized film thickness H/λ is within the range of approximately 0.005 to 0.05.

6. (issued) A surface acoustic wave device according to claim 1, wherein said interdigital transducer includes Cu as a major component, said substrate has Euler angles of approximately (0° , $125^\circ - 137^\circ$, $0^\circ \pm 5^\circ$), and said normalized film thickness H/λ is within the range of approximately 0.003 to 0.05.

7. (issued) A surface acoustic wave device according to claim 1, wherein said interdigital transducer includes Ni as a major component, said substrate has Euler angles of approximately (0° , $125^\circ - 133^\circ$, $0^\circ \pm 5^\circ$), and said normalized film thickness H/λ is within the range of approximately 0.006 to 0.05.

8. (issued) A surface acoustic wave device according to claim 1, wherein said interdigital transducer includes Cr as a major component, said substrate has Euler angles of approximately (0° , $125^\circ - 147^\circ$, $0^\circ \pm 5^\circ$), and said normalized film thickness H/λ is within the range of approximately 0.003 to 0.05.

9. (issued) A surface acoustic wave device according to claim 1, wherein said interdigital transducer includes Zn as a major component, said substrate has Euler angles of approximately (0° , $125^\circ - 138^\circ$, $0^\circ \pm 5^\circ$), and said normalized film thickness H/λ is within the range of approximately 0.003 to 0.05.

10. (issued) A surface acoustic wave device according to claim 1, wherein said interdigital transducer includes W as a major component, said substrate has Euler angles of approximately (0° , $125^\circ - 138^\circ$, $0^\circ \pm 5^\circ$), and said normalized film thickness H/λ is within the range of approximately 0.002 to 0.05.

Serial No. 10/813,690

April 27, 2005

Reply to the Office Action dated January 27, 2005

Page 4 of 8

11. (issued) A communication device including the surface acoustic wave device according to claim 1.

12. (issued) A communication device including the surface acoustic wave device according to claim 2.

13. (issued) A communication device including the surface acoustic wave device according to claim 3.

14. (issued) A communication device including the surface acoustic wave device according to claim 4.

15. (issued) A communication device including the surface acoustic wave device according to claim 5.

16. (issued) A communication device including the surface acoustic wave device according to claim 6.

17. (issued) A communication device including the surface acoustic wave device according to claim 7.

18. (issued) A communication device including the surface acoustic wave device according to claim 8.

19. (issued) A communication device including the surface acoustic wave device according to claim 9.

20. (issued) A communication device including the surface acoustic wave device according to claim 10.

Serial No. 10/813,690
April 27, 2005
Reply to the Office Action dated January 27, 2005
Page 5 of 8

21. (new) A surface acoustic wave device comprising:
a LiTaO₃ substrate; and
an interdigital transducer provided on the LiTaO₃ substrate, said interdigital
transducer containing as a major component at least one of Au, Ag, Ta, Mo, Cu, Ni, Cr,
Zn, and W; wherein

said interdigital transducer has a normalized film thickness H/λ within a range of
approximately 0.001 to approximately 0.05;

the substrate has Euler angles of approximately (0° , 136° to 147° , $0^\circ \pm 5^\circ$).

22. (canceled).

23. (new) A surface acoustic wave device according to claim 21, wherein the
substrate has Euler angles of approximately (0° , 136° to 137° , $0^\circ \pm 5^\circ$).

24. (new) A surface acoustic wave device according to claim 21, wherein the
substrate has Euler angles of approximately (0° , 136.5° , $0^\circ \pm 5^\circ$).

25. (new) A surface acoustic wave device according to claim 21, wherein the
normalized thickness H/λ is within a range of approximately 0.03 to approximately 0.05.

26. (new) A surface acoustic wave device according to claim 21, wherein the
normalized thickness H/λ is approximately 0.04.

27. (new) A surface acoustic wave device according to claim 21, wherein the
major component is Cu;

the normalized thickness H/λ is within a range of approximately 0.03 to
approximately 0.05; and

the substrate has Euler angles of approximately (0° , 136° to 137° , $0^\circ \pm 5^\circ$).

Serial No. 10/813,690
April 27, 2005
Reply to the Office Action dated January 27, 2005
Page 6 of 8

28. (new) A surface acoustic wave device according to claim 21, wherein the major component is Cu;

the normalized thickness H/λ is approximately 0.04; and

the substrate has Euler angles of approximately $(0^\circ, 136^\circ \text{ to } 137^\circ, 0^\circ \pm 5^\circ)$.

29. (new) A surface acoustic wave device according to claim 21, wherein the major component is Cu;

the normalized thickness H/λ is within a range of approximately 0.03 to approximately 0.05; and

the substrate has Euler angles of approximately $(0^\circ, 136.5^\circ, 0^\circ \pm 5^\circ)$.

30. (new) A surface acoustic wave device according to claim 21, wherein the major component is Cu;

the normalized thickness H/λ is approximately 0.04; and

the substrate has Euler angles of approximately $(0^\circ, 136.5^\circ, 0^\circ \pm 5^\circ)$.

31. (new) A surface acoustic wave device according to claim 21, wherein the major component is Cu; and

the substrate has Euler angles of approximately $(0^\circ, 136^\circ \text{ to } 137^\circ, 0^\circ \pm 5^\circ)$.

32. (new) A surface acoustic wave device according to claim 21, wherein the major component is Cu; and

the substrate has Euler angles of approximately $(0^\circ, 136.5^\circ, 0^\circ \pm 5^\circ)$.